In the claims:

Cancel all claims without prejudice.

27. A unipolar transverse flux machine, comprising a housing; a rotor rotatable about a rotor axis, said rotor having at least one rotor module assembled from two coaxial ferromagnetic rotor rings toothed with a constant tooth pitch and one permanent-magnet ring fastened between said rotor rings and magnetized unipolarly in a direction of said rotor axis; a stator which is concentric with said rotor axis and having at least one stator module associated with said rotor module and including an annular coil disposed coaxially to said rotor axis and U-shaped stator yokes fitting over said annular coil and fixed with a pitch corresponding to a tooth pitch of said housing, said rotor rings having a toothing provided solely on an outer circumference of said rotor rings remote from said rotor axis, said stator yokes in said stator module being disposed such that one leg of each of said stator yokes is located facing one of said rotor rings and another leg of each of said stator yokes is located facing another of said rotor rings in each case with a radial gap spacing; and one short-circuit element each disposed

between successive ones of said stator yokes in a direction of rotation of said rotor and extending axially over both said rotor rings and facing said rotor rings with a radial gap spacing.

28. A unipolar transverse flux machine as defined in claim 27, wherein said rotor has two said identical rotor modules and said stator has two said identical stator modules, said stator modules being firmly seated axially side-by-side in said housing and said rotor modules being firmly seated axially side-by-side on a rotor shaft, in a mutual relationship such that said modules and said stator modules of said rotor modules are each rotated electrically from one another by 90 electrical degrees.

29. A unipolar transverse flux machine as defined in claim 27, wherein said rotor has n rotor modules and said stator has m stator modules, said stator modules being firmly seated axially side-by-side in said housing and said rotor housing being firmly seated axially side-by-side on a rotor shaft each in a mutual relationship such that said modules of said stator modules and said rotor modules are each rotated electrically from one another by 360/m electrical degrees, wherein m is an integer and is greater than 2.

30. A unipolar transverse flux machine as defined in claim 27, wherein said stator yokes, said short-circuit elements and said rotor rings are laminated.

31. A unipolar transverse flux machine as defined in claim 27, wherein said short-circuit elements are disposed with an offset of one pole pitch from said stator yokes.

32. A unipolar transverse flux machine as defined in claim 27, wherein said radial gaps spacing between said stator yokes and said rotor rings is equal to the radial gap spacing between short-circuit elements and said rotor rings.

33. A unipolar transverse flux machine as defined in claim 27, wherein each respective free end face of the respective leg of said stator yokes has at least same axial width as said rotor rings, and said free end face protruding past said rotor rings on one or both sides thereof.

34. A unipolar transverse flux machine as defined in claim 27, wherein a width of said short-circuit elements measured in the direction of rotation is approximately equal.

35. A unipolar transverse flux machine as defined in claim 27, wherein a ratio of a tooth width of the teeth on said rotor rings to a width of said stator yokes and said short circuit elements, each viewed in the direction of rotation is selected to be greater than 1 and less than 2.

36. A unipolar transverse flux machine as defined in claim 27, wherein said short-circuit elements are in form of a C-shape, each C-shape having two short legs each radially facing a respective rotor rings and one crossbar connecting said legs of said C-shap to one another, said cross bar extending parallel to said rotor axis and opposes an inner peripheral side of an annular coil of a circular shape.

37. A unipolar transverse flux machine as defined in claim 27, wherein said short-circuit elements are in form of a U-shape each with two long legs radially facing respective rotor rings and having one cross bar connecting said long legs and said cross bar extending parallel to said rotor axis; and further comprising an annular coil of said stator module which is shaped in meandering fashion, point-symmetrically to said rotor axis in a radial plane, in such a way that in successive alternation said annular coil extends through a space between said legs of said stator yoke and beyond an outside region remote from said rotor axis of a crossbar of said short-

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circuit element.

38. A unipolar transverse flux machine as defined in claim 27, wherein said stator yokes and said short-circuit elements are embodied identically in size and shape.

39. A unipolar transverse flux machine as defined in claim 38, wherein respective free end faces of said legs of said short-circuit elements have at least a same axial width as said rotor rings, said respective free ends faces protruding past said respective rotor rings on one or both sides.

40. A unipolar transverse flux machine as defined in claim 27, wherein said stator has m number of plural stator modules, said stator modules being supplied with current in current pulses bipolarly as a function of a rotational angle of said rotor, said current pulses in said stator modules, wherein one of two conditions occur: when m is equal 2, there are two stator modules are being faced-displaced by 90 electrical degrees from one another, and when M is greater than 2, said m number of said stator modules are being phase-displaced from one another by 360/m electrical degrees.

41. A unipolar transverse flux machine as defined in claim 27, wherein each of said stator modules is received in said housing, said housing comprising two half shells which are embodied identically in size and shape and placed on one another mirror-symmetrically and having axially aligned radial grooves for insertion of said stator yokes and said short-circuit elements and also having indentations for receiving an annular coil, that face one another mirror-symmetrically and are oriented concentrically to an axis of said housing.

42. A unipolar transverse flux machine as defined in claim 41, wherein each of said half shells has a grid-shaped structure with an inner ring and an outer ring concentric to one another and integrally joined to one another by radial ribs, said inner ring having radial grooves that receive said short-circuit elements and said stator yokes have radial grooves extending across said inner ring, a radial rib and said outer ring.

43. A unipolar transverse flux machine as defined in claim 42, wherein radial ribs have indentations for an annular coil.

44. A unipolar transverse flux machine as defined in claim 42, wherein said stator yokes and said radial grooves which receive said stator

yokes are adapted to one another such that when said stator yokes and said short-circuit elements are inserted in said radial grooves said two half shells are fixed against one another radially and axially nondisplaceably.

45. A unipolar transverse flux machine as defined in claim 44, wherein said radial grooves have a width adapted to a thickness of said stator yokes and said short-circuit elements, said radial grooves having an axial depth which is dimensioned as slightly larger than half an axial width of said stator yokes and said short-circuit elements.

46. A unipolar transverse flux machine as defined in claim 44, wherein said stator yokes have respective crossbars and a respective protruding hook on both sides of each of said respective crossbars such that when said stator yokes are inserted in said radial grooves said hook fits by positive engagement over said radial rib of said two half shells on a back side remote from said radial groove.

47. A unipolar transverse flux machine as defined in claim 46, wherein the machine is configured as an axial multi-lane structure, wherein said rotor modules are disposed in axial alignment on a rotor shaft and said stator modules are rotated by a fixed angle relative to one another, and

wherein two spaced-apart radial recesses are inserted from an outside of said half shell and remote from said radial grooves into annular portions of said outer ring that extends between said radial ribs, said recesses having in a circumferential direction a width corresponding to a width of said hooks that protrude from said stator yokes, said radial recesses having a radial depth corresponding to an axial length of said hooks, one of said radial recesses being disposed offset by a fixed rotational angle from a next one of said radial grooves in succession for a stator yoke, and another of said radial recesses being disposed offset by a same fixed angle from a preceding radial groove for said stator yoke.

48. A unipolar transverse flux machine as defined in claim 44, wherein the machine is configured as an axial multi-lane structure, wherein said stator modules are axially aligned and said rotor modules are disposed rotated relative to one another by a fixed angle on a rotor shaft, said stator yokes of said stator modules being located side-by-side in an axial direction and joined together in a crossbar region by axially extending bridges, said stator yokes being joined together and having on an outer side two outer stator yokes each having one hook protruding from a crossbar, said hook, when said stator yokes are inserted in said radial grooves, fitting over a radial rib of one of said two outer half shells on a back side remote from said radial

groove.

49. A unipolar transverse flux machine as defined in claim 48, wherein said stator yokes joined together via said bridges are formed as one-piece stamped parts.

50. A unipolar transverse flux machine as defined in claim 46, wherein each of said radial grooves on an end located in said outer ring has a radial recess provided in a groove bottom, said radial recess having a radial depth which is dimensioned such that when said stator yoke is inserted in a correct position into said radial groove, a root of said hook protruding from said cross bar strikes a bottom of said recess with a lower edge pointing toward said inner ring.

51. A unipolar transverse flux machine as defined in claim 41; and further comprising two bearing plates provided for a rotational support of said rotor shaft and placed on two outer half shells, said plates being secured to said half shells with a flange part and receiving said rotor shaft in a bearing prop protruding from said flange part.

52. A unipolar transverse flux machine as defined in claim 27,

wherein at least one of said rotor modules is disposed on a hollow shaft so as to be fixed against relative rotation.